PE JC17

Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in this application.

Listing

Claim 1 (previously amended): A single-piece manifold for a fire sprinkler system comprising:

a body defining a conduit therethrough, an inlet to said conduit for connecting said manifold to a supply of water, an outlet to said conduit for connecting said manifold to the fire sprinkler system, a main valve in said conduit movable between an open position in which water may enter said body and a closed position in which water is prevented from passing through said body, a check valve arrangement within said conduit for preventing reflux of water back into said water supply, and a vent passageway in communication with said conduit for preventing water from flowing on through to said fire sprinkler system when there is a pressure surge in said water supply.

Claim 2 (original): The single-piece manifold of claim 1 wherein said check valve arrangement comprises a first check valve and a second check valve, said first and second check valves being spaced apart; said first and second check valves being slidable between a closed position wherein said first and second check valves engage a respective valve seat to prevent fluid from passing through said conduit and an open position wherein fluid can pass through said conduit.

Claim 3 (original): The single-piece manifold of claim 2 wherein said first and second check valves are biased closed by a spring means.

Claim 4 (currently amended): The single-piece manifold of claim 3 wherein the pressure generated by said water supply must ~~be at least 175 psi to~~ overcome the spring force applied by said spring means to open said first and second check valves.

Claim 5 (original): The single-piece manifold of claim 2 wherein each of said first and second check valves includes a valve body, a tubular member, a hollow nose, a guide tube provided in said body, wherein said second check valve's shaft is slidably received in said guide tube supported by said body, and the shaft of said first check valve being slidably received in said hollow nose of said second check valve.

Claim 6 (original): The single-piece manifold of claim 5 wherein said first and second check valves include guide arms extending from said valve plug to support said first and second check valves in said conduit.

Claim 7 (original): The single-piece manifold of claim 6 wherein the valve seat of said second check valve includes ribs defining channels, said guide arms of said second check valve being received in said channels.

Claim 8 (original): The single-piece manifold of claim 2 further including fire alarm means responsive to movement of said second check valve, and means for preventing the sounding of a false alarm.

Claim 9 (original): The single-piece manifold of claim 8 wherein said fire alarm means includes a flow switch arrangement which sounds a fire alarm when activated, a plunger which is slidably received in a sleeve to be moved into and out of close proximity

with said flow switch arrangement to activate said flow switch arrangement by a cam surface of said second check valve, wherein when said second check valve is moved to an open position, cam surface forces said plunger into contact with said flow switch arrangement to sound said fire alarm.

Claim 10 (previously amended): The single-piece manifold of claim 9 wherein said plunger includes a first magnet and said flow switch arrangement includes a second magnet, wherein the close proximity of said first and second magnets cause said fire alarm to sound when said second check valve is placed in the open position.

Claim 11 (currently amended): The single-piece manifold of claim 1 wherein said main valve is operatively connected to a tamper switch so that when said main valve is placed in the open position, said tamper switch is de-energized, and when said main valve is placed in a ~~the closed~~ position other than said open position, said tamper switch is energized and sounds an alarm.

Claim 12 (currently amended): The single-piece manifold of claim 8 wherein said false alarm prevention means comprises a space bounded by said first and second check valves, said space being in communication with said vent passageway and being ~~of sufficient length~~ adapted to smooth out any random pressure surges in said water supply which would otherwise open said second check valve.

Claim 13 (original): The single-piece manifold of claim 1 wherein said vent passageway communicates with atmosphere for venting excess pressure from said space.

Claim 14 (original): The single-piece manifold of claim 1 further including a test valve comprising a test valve body having a piston forming a tip thereon, said piston being movable between a closed position in which said tip engages a valve seat and an open position in which water may flow through said test valve.

Claim 15 (original): The single-piece manifold of claim 14 wherein said piston is operatively associated with a cam, said piston operating as a cam follower, said cam being rotated by a cam lever, which when turned will move said piston between its open and closed positions.

Claim 16 (original): The single-piece manifold of claim 1 wherein said body includes a main housing and a rear housing, said main housing including a rearward flange; said rear housing including resilient fingers which engage said flange to hold said main housing and rear housing together.

Claim 17 (withdrawn): The single-piece manifold of claim 1, wherein said check valve arrangement comprises a first check valve and a second check valve, said first and second check valves being pivotable between a closed position wherein said first and second check valves engage a respective valve seat to prevent fluid from passing through said conduit and an open position wherein fluid can pass through said conduit.

Claim 18 (withdrawn): The single-piece manifold of claim 17, wherein said first and second check valves are biased closed by a spring means.

Claim 19 (withdrawn): The single-piece manifold of claim 18, wherein the pressure generated by said water supply must be at least 175 psi to overcome said spring means to place said first and second check valves in the open position.

Claim 20 (withdrawn): The single-piece manifold of claim 17, wherein each of said first and second check valves includes a valve body having an axial extension extending from said valve body.

Claim 21 (withdrawn): The single-piece manifold of claim 20, wherein said valve body is pivotally mounted to said body of said manifold at a pivot point by a rod inserted therethrough, such that said valve body pivots about said pivot point.

Claim 22 (withdrawn): The single-piece manifold of claim 20, wherein said valve body defines a pair of grooves adapted to receive a sealing means for providing a fluid tight seal between respective valve seat and said valve body.

Claim 23 (withdrawn): The single-piece manifold of claim 20, further including a flow switch arrangement operatively associated with said second check valve, said flow switch arrangement causing the sounding of an alarm when said second check valve is placed in the open position by the flow of fluid through said conduit.

Claim 24 (withdrawn): The single-piece manifold of claim 23, wherein said second check valve includes a magnet and said flow switch arrangement includes a magnet such that said flow switch arrangement is actuated and signals an alarm whenever said magnets come into close proximity.

Claim 25 (previously presented): A check valve assembly carried by a body of a single-piece fire-sprinkler manifold, said assembly comprising:

a first check valve and a second check valve, said first and second check valves each having a valve body, hollow nose, and guide arms extending from said valve body, said tubular member of said first check valve being slidably received in said hollow nose of said second check valve to be slidably positioned between a closed position wherein said first check valve engages said hollow nose of said second check valve to prevent fluid flow and an open position wherein said first check valve disengages said hollow nose of said second check valve to permit fluid flow.

Claim 26 (previously presented): The check valve assembly of claim 25 wherein said single-piece fire-sprinkler manifold body includes a guide tube and a second valve seat, said tubular member of said second check valve being slidably received in said guide tube to slide between a closed position in which said second check valve engages said second valve seat and an open position wherein said second check valve disengages said second valve seat.

Claim 27 (currently amended): The check valve assembly of claim 26 wherein said first and second check valves are spaced apart to define a space, said space being ~~of sufficient length~~ adapted to dampen momentary pressure surges which can open said first check valve, to prevent said momentary surges from opening said second check valve.

Claim 28 (previously presented): The check valve assembly of claim 27, further including a vent passageway, wherein said vent passageway is in communication with said space for venting momentary pressure surges inside said conduit to atmosphere.

Claim 29 (previously amended): A single-piece manifold for a fire sprinkler system comprising a body having a flowpath therethrough, an inlet to said flowpath for connecting said body to a supply of water, an outlet to said flowpath for connecting said body to said sprinkler system, a first valve and a second valve disposed in said flowpath, and a means for preventing the sounding of false alarms by opening of said second valve caused by a pressure surge in said flowpath, said body further including an area formed between said first and second valves, said first and second valves being moveable between an open position and a closed position, said means for preventing false alarms comprising a vent passageway having one end open to atmosphere to allow said pressure surge to dampen so that said pressure surge will not open said second valve to cause said false alarms.

Claim 30 (previously amended): The single-piece manifold of claim 29 further including a first seat associated with said first valve, a second seat associated with said second valve, and an area formed between said first and second valves, each of said first and second valves comprising a valve body which engages its associated seat, said valves being moveable between an open position and a closed position.

Claim 31 (currently amended): A single-piece manifold comprising:

a body having a flowpath therethrough, an inlet to said flowpath for connecting said body to a supply of water, an outlet to said flowpath for connecting said body to a sprinkler system, a first valve and a second valve disposed in said flowpath,

a flow switch arrangement electrically connected to an alarm for sounding said alarm when activated,

a plunger means for activating said flow switch arrangement when fluid flows through said conduit, and

a sleeve in communication between the flow switch arrangement and said flowpath, said sleeve being positioned above said second valve when said second valve is placed in an open position, said plunger means comprising a plunger slidably received in said sleeve so that when said second valve moves to an open position said second valve engages said plunger to urge said plunger upwards to activate said flow switch arrangement and sound said alarm.

Claim 32 (cancelled).

Claim 33 (cancelled).

Claim 34 (currently amended): The single-piece manifold according to claim 31, wherein said first valve or said second valve includes a cam surface that forces said plunger into contact with said flow switch arrangement to sound said alarm.

Claim 35 (previously presented): The single-piece manifold according to claim 31 wherein said plunger includes a first magnet and said flow switch arrangement includes a second magnet, wherein close proximity of said first and second magnets activates said alarm.

Claim 36 (currently amended): The single-piece manifold according to claim 35, wherein said first and second magnets are brought in close proximity when said first valve or said second valve is placed in the open position and said plunger is forced upwards through said sleeve.

Claim 37 (previously presented): The single-piece manifold according to claim 35, wherein said flow switch arrangement further comprises a flow switch having a magnet attached to a conductive moving switch blade connected to a positive terminal, and a conductive stationary blade is connected to a negative terminal, wherein close proximity of said first and second magnets causes said moving switch blade being brought into contact with said conductive stationary blade causing activation of said alarm.